

**FACT SHEET**  
(pursuant to NAC 445A.401)

**PERMITTEE NAME:** Newmont Mining Corporation

**SITE NAME:** Trinity Silver Mine

**PERMIT NUMBER:** NEV0087031 – Post-Closure Monitoring

**A. DESCRIPTION OF FACILITY**

**LOCATION:**

This facility is located on the northwest flank of the Trinity Range in Pershing County, Township 29 North, Range 30 East, Section 9, approximately 16 air miles north northwest of Lovelock.

**CHARACTERISTICS:**

The Trinity Silver Mine is in post-closure monitoring. The mine was operated from August 1987, to November 1989, and processed 1,035,000 tons of ore by heap leaching. The mine components consisted of one cyanide heap leach pad, three process ponds - two of which have been completely removed and a third which has been converted into an evaporation cell, one pit, and a series of waste rock dumps that line the perimeter of the pit. The leach pad and waste rock dumps were recontoured and covered with alluvial material. All process and office buildings have been removed. A total of approximately 142 acres have been disturbed. The mine site is located entirely on private property.

**B. SYNOPSIS**

The Trinity Silver Mine was owned through a joint venture between Santa Fe Pacific Mining, Inc., (SFPMI) and Pacific Coast Mines, Inc. SFPMI assumed complete responsibility for the site in 1990. Newmont Mining Corporation (NMC) and SFPMI merged in May of 1997. After the merger, NMC became the sole responsible Permittee.

The construction of mine components began in August 1987. Mining activities commenced on September 3, 1987 and were completed on August 29, 1988. Crushing and agglomeration of the ore was completed on October 16, 1988. Leaching and operation of the Merrill Crow Plant was continued until November 11, 1989. All buildings have been removed from the site.

Water Pollution Control permit NEV70031 was first issued to U.S. Borax in 1987. The permit number was later changed to NEV0087031. Newmont Mining Corporation renewed the permit in 1999. This will be the second renewal.

### **PIT:**

The Trinity Silver Mine operated within an apparent dome of rhyolite porphyry. This rhyolite porphyry contained the precious metal mineralization controlled by a typical range-front Basin-and-Range fault system. Both the ore body and overburden material are interspersed with sulfides.

The site has one pit which has a surface area of approximately 19 acres. Maximum depth of the pit is 236 feet. The lateral dimensions are roughly 1400 feet by 500 feet. Greater amounts of sulfidic materials were encountered in the bottom of the pit. After mining was completed, the entire pit bottom was covered with a minimum of four feet of oxide waste. The pre-mining elevation of the pit was approximately 5275 feet above mean sea level (amsl). The main production well is located approximately 500 feet to the south of the pit at a similar elevation. Depth to groundwater in this well has been measured at approximately 370 feet below the wellhead. This would indicate that depth to groundwater below the bottom of the pit floor should be in excess of 100 feet. The pit has never impounded ground or meteoric waters and is not expected to in the future.

Post-closure monitoring of the pit will consist of designating pit surfaces as dry, damp or wet (visible flow or ponding). If a ground water source or large amount of meteoric solution is present, collect a representative sample and analyze for Profile I constituents. A field pH and specific conductance (SC), together with photos of the ponded area shall also be taken. The pit will also be evaluated for stability, safety and access restrictions.

### **DUMPS:**

Waste rock was placed in a series of dumps that line the perimeter of the pit. The total acreage disturbed by waste rock dumps is 34 acres. All three dumps consist of both oxide and sulfidic waste rock, with oxides being the dominant material. Acid neutralization potential (ANP) and acid generation potential (AGP) test results indicated that oxide material was neutral, i.e. – below method detection limits of 1 ton  $\text{CaCO}_3$  per thousand tons of material for both acid neutralization and acid generation potential. During final closure activities, Newmont placed a minimum of 24 inches of alluvial material over the side slopes and a minimum of 12 inches alluvial material over the tops of the lower lift of the main dump and the small dump to the west. The remaining dumps had been covered previously with oxide material. Although acid generating material is available, the low overall

precipitation in the area has, to this date, precluded any of the associated Acid Rock Drainage (ARD) problems from occurring.

The Permittee will be required, quarterly, to inspect all waste rock dumps for physical stability, seepage, ponding of meteoric water, and any ARD symptom, to include impacts to revegetation, from any portion of a waste rock dump. Should evidence of an ARD condition or any solution discharging or impounding be noted, a field pH, field specific conductance measurement, photos, and a water quality sample (Profile I) will be taken.

#### **HEAP LEACH PAD:**

The heap leach pad is approximately 24 acres in size and contains approximately 1,035,000 tons of spent ore. The primary liner is 60-mil HDPE with a 12-inch compacted soil layer below the primary liner. The leak detection system consisted of an 8-inch sand layer and a 2-inch drainpipe placed in the bottom of the collection ditch. The leak detection system remains operative and has been dry since 1999.

During operations, ore was crushed to minus  $\frac{3}{4}$  inch and agglomerated with cement at approximately 10.5 pounds per ton ore.

In 1997, the heap was reshaped and regraded to nominal 3H: 1V slope. The heap was capped with alluvial material (growth media) to a depth of 12 inches and seeded. Current vegetative growth is similar to native growth.

Since 1999, draindown constituents that have exceeded the State of Nevada Safe Drinking Water Maximum Contaminant Levels (MCL's), and trending high with time, all during summer 2003, include cadmium (0.0272 mg/L), manganese (0.179 mg/L), nitrate (150 mg/l) and zinc (7.4 mg/l).

Other constituents that indicate minimal variation in values over time include arsenic (1.89 mg/L), antimony (0.114 mg/L), chloride (763 mg/L), sulfate (1100 mg/L) and TDS (3980 mg/L).

Constituents exceeding Safe Drinking Water MCL's with decreasing values over time include WAD CN (0.349 mg/L - summer 2003). All values approximate.

Acid-base accounting (WESTEC, 1993) of the spent heap material indicated that the acid neutralization potential was, on average, 10 times the acid generation potential. However, over time, both alkalinity and pH values in heap draindown samples have been decreasing. It is believed that since the ore/overburden materials have limited ANP values, alkalinity provided through agglomeration is being consumed. Due to the very limited nature of heap

draindown, should ARD conditions arise in the heap, the closure scenario will not be impacted.

The modeled heap solution draindown (HELP model) predicts a drainage rate of less than 0.1 gallon per minute (gpm) flow over the long term. However, the last measurable flow from the heap, 0.04 gpm, was recorded on April 28, 2003. Draindown flow had ceased completely by July 2003. The termination of flow is most likely due to the lack of precipitation at the site and also the excellent revegetation success of the heap.

The operator will be required, quarterly, to inspect the heap for physical stability, seepage, ponding of meteoric water, and any ARD symptoms, to include impacts to revegetation from any portion of the heap. Should evidence of an ARD condition or any solution discharging or impounding be noted, the operator is required to take a field pH and field specific conductance measurement, photos, and a water quality sample (Profile I). In addition, the operator will be required to purge the leak detection sump on a quarterly basis, report the total amount of fluid collected, and, if greater than one liter in volume, analyze the solution (Profile II).

#### **PROCESS PONDS:**

The original pregnant pond dimensions were 240 feet by 140 feet, with a depth of 13 feet. The sideslopes were constructed at 3H: 1V and the pond had a 2 million gallon capacity. The primary liner consisted of 60-mil HDPE. The secondary liner is constructed of a one-foot thick compacted clay/soil. Approximately 8-inches of sand separate the two liners. The pond leak detection system reported to a sump and remains in-place and functional. The leak detection sump has been dry since September 2003.

Because both modeling and empirical data pointed to a very low long-term heap draindown flow, it was theorized that an evaporation basin would be sufficient to manage any future heap draindown. In the Fall of 2003, the pregnant pond was converted into an evaporation (E) basin. The remaining small quantity of pond sludge was left in place. This sludge was covered with a minimum of 24 inches of clay material, lightly compacted and then overlain with geotextile. A 24-inch diameter piezometer was installed. The bottom of the piezometer is located on the surface of the 24-inch clay cover. Alluvial material was then backfilled into the basin to a depth of approximately three feet below the crest. Slotted, corrugated piping was installed across the surface of the backfill to distribute draindown across the E basin. Backfill was then placed over the entire basin with a least three feet covering the solution piping and the final surface was 'crowned' to direct meteoric water off and away from the E basin. The total depth of backfill above the 24-inch clay material encapsulating the clay is 11 feet. The piezometer well head is 2 feet above the completed backfill.

Draindown is conveyed to the E basin through the original 10-inch diameter pipe which terminates in the solution collection ditch. A boot was placed on the end of the inlet pipe and reduced to 4-inches. A distribution box was installed in the E basin inlet. The 4-inch pipe connects to the distribution box, allows for sampling of draindown solution, and continues out to the E basin. Solution is evenly distributed to the E basin through two primary headers to which a series of 4-inch diameter perforated pipes are attached.

Post-closure monitoring of heap leach draindown solution chemistry and flow will be achieved through sampling at the E Basin Inlet, located prior to entering the E basin. The operator will be required, quarterly, to measure flow and provide a Profile I analysis of heap draindown. In addition, a piezometer reading, depth of solution from the bottom of the piezometer, will also be taken quarterly. Should piezometer measurements demonstrate an increasing trend of solution volumes impounding within the E Basin over time, the operator may be required to investigate alternative methods for removing solution from the system.

The E Basin leak detection port will be monitored on a quarterly basis. The operator will be required to purge the leak detection sump on a quarterly basis, report the total amount of fluid purged, and if greater than one liter in volume, analyze the solution for a Profile II. Should the sump contain solution, a discussion of possible sources of this solution and potential impacts to the environment will be provided.

A photo of the surface of the basin, focusing on revegetation and overall E basin stability, taken on a quarterly basis, is also required.

A Screening Level Ecological Risk Assessment (SLERA), examining vegetative metal uptake and potential threats to receptors, will be required should significant revegetation of the E Basin surface occur.

**C. SITE HYDROLOGY AND BACKGROUND CHARACTERISTIC:**

Annual precipitation in the area of the mine site averages between 5 to 6 inches. There are no known springs, seeps or perennial streams near the mine site. The nearest surface water flow would be the intermittent Sandy Valley wash located approximately 5 miles downgradient of the site. There are no known wells hydraulically downgradient of the site.

Depth to ground water, throughout the site, is estimated to be approximately 370 feet. Ground water samples taken from the main production well, located onsite, indicated that arsenic and iron consistently exceeded the State of Nevada Safe Drinking Water MCL's.

**D. PROCEDURES FOR PUBLIC COMMENT**

The Notice of the Division's intent to issue a permit authorizing the Permittee to close the Trinity Silver Mine, subject to the conditions contained within the permit, is being sent to the **Lovelock Review-Miner** in Lovelock for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing within a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

All written comments received during the comment period will be retained and considered in the final determination. A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected intrastate agency, the regional administrator, or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.403 through NAC 445A.406.

The final determination of the Administrator may be appealed within 15 days of the decision to the State Environmental Commission pursuant to NRS 445A.605.

**E. PROPOSED DETERMINATION**

The Division has made the tentative determination to issue the permit.

**F. PROPOSED EFFLUENT LIMITATIONS, SCHEDULE OF COMPLIANCE AND SPECIAL CONDITIONS**

See Section I of the permit.

**G. RATIONALE FOR PERMIT REQUIREMENTS**

The former pregnant pond has been converted into a zero-discharge evaporation basin. This Water Pollution Control Permit forbids any discharge to the environment except for excess accumulations which exceed the 25-year, 24-hour storm event.

The primary means of identifying escaping solution will be placed on routine inspection of the facilities as required per Part I.D. of the Water Pollution Control Permit.

**H. FEDERAL MIGRATORY BIRD TREATY ACT**

Under the Federal Migratory Bird Treaty Act, 16 U.S.C. 701-718, it is unlawful to kill migratory birds without license or permit, and no permits are issued to take migratory birds using toxic ponds. The Federal list of migratory birds (50CFR10, April 15, 1985) includes nearly every bird species found in the State of Nevada. The U.S. Fish and Wildlife Service is authorized to enforce the prevention of migratory bird mortalities at ponds and tailings impoundments. Compliance with state permits may not be adequate to ensure protection of migratory birds for compliance with provisions of Federal statutes to protect wildlife. Open waters attract migratory waterfowl and other avian species. High mortality rates of birds have resulted from contact with toxic ponds at operations utilizing toxic substances. The Service is aware of two approaches that are available to prevent migratory bird mortality: 1) physical isolation of toxic water bodies through barriers (covering with netting), and 2) chemical detoxification. These approaches may be facilitated by minimizing the extent of toxic water. Methods which attempt to make uncovered ponds unattractive to wildlife are not always effective. Contact the U.S. Fish and Wildlife Service at 1340 Financial Blvd., Reno, Nevada 89502, (775) 861-6300, for additional information.